

National curriculum or specification coverage

AQA Advanced Level physics – Specification 7408

3.4.1 Force, energy and momentum

- 3.4.1.1 Scalars and vectors
- 3.4.1.2 Moments
- 3.4.1.3 Motion along a straight line
- 3.4.1.4 Projectile motion
- 3.4.1.5 Newton's laws of motion
- 3.4.1.6 Momentum
- 3.4.1.7 Work, energy and power
- 3.4.1.8 Conservation of energy

3.4.2 Materials

- 3.4.2.1 Bulk properties of solids
- 3.4.2.2 The Young modulus

3.5.1 Current electricity

- 3.5.1.1 Basics of electricity
- 3.5.1.2 Current-voltage characteristics
- 3.5.1.3 Resistivity
- 3.5.1.4 Circuits
- 3.5.1.5 Potential divider
- 3.5.1.6 Electromotive force and internal resistance

3.6.1 Periodic motion

- 3.6.1.1 Circular motion

Year 12 Long Term Scheme of Learning 2026-2027

Subject: Physics (Teacher two)

Date	Exams/ Assessments	Learning Intentions	Core Task/Assessments
31/08/26		3.4.1.1 Scalars and vectors & 3.4.1.2 Moments - Describe the nature of scalars and vectors, with examples - Resolve coplanar forces into F_x and F_y using $F\cos\theta$ and $F\sin\theta$. - State and apply the principle of moments - Construct closed vector triangles to solve 3-force static equilibrium problems. - Appreciation of the meaning of equilibrium in the context of an object at rest or moving with constant velocity.	Core Task 1 – Scalar, Vectors & Moments
07/09/26			
14/09/26			
21/09/26			
28/09/26		3.4.1.3 Motion along a straight line & 3.4.1.4 Projectile motion - Select and rearrange SUVAT equations for 1D and 2D projectile motion. - Extract acceleration (gradient) and displacement (area) from $v-t$ graphs. - Describe and evaluate practical methods for determining g (Required Practical 3).	Core Task 2 – SUVAT equations
05/10/26			
12/10/26			
19/10/26			
26/10/26	HALF TERM		
02/11/26		3.4.1.5 Newton’s laws of motion - Knowledge and application of the three laws of motion in appropriate situations - Explain terminal velocity using balanced/unbalanced force vectors and drag force changes.	Assessment (AP1)
09/11/26			
		3.4.1.8 Conservation of energy - Principle of conservation of energy. - Quantitative and qualitative application of energy conservation to examples involving gravitational potential energy, kinetic energy, and work done against resistive forces.	Core task 3 – Newton's laws of motion & conservation of energy & momentum
16/11/26	Y12		
23/11/26	Y12		
30/11/26		3.4.1.6 Momentum - momentum=mass×velocity - Conservation of linear momentum. - Principle applied quantitatively to problems in one dimension. - Force as the rate of change of momentum. - Solve 1D elastic/inelastic collision and explosion problems using conservation of momentum. - Apply $F=\Delta t/\Delta p$ and calculate impulse from force-time graphs ($I=F\Delta t$).	
07/12/26			
14/12/26			
21/12/26	CHRISTMAS HOLIDAY		
28/12/26			
04/01/27		3.4.1.7 Work, energy and power	

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11/01/27		- Energy transferred, $W = F \cos \theta$ - rate of doing work=rate of energy transfer, $P = \Delta W / \Delta t = Fv$ - Quantitative questions may be set on variable forces. - Significance of the area under a force–displacement graph. - efficiency=useful output power / input power - Efficiency can be expressed as a percentage.	Core Task 4 – Work, energy & power
18/01/27			
25/01/27			
01/02/27			
08/02/27		3.5.1.1 Basics of electricity - Electric current as the rate of flow of charge; - potential difference as work done per unit charge. - Resistance defined as $R = V / I$ - Series circuits - Parallel circuits - Calculating resistance in series and parallel.	
15/02/27	HALF TERM		
22/02/27		3.5.1.2 Current–voltage characteristics - For an ohmic conductor, semiconductor diode, and filament lamp. - Ohm’s law as a special case where $I \propto V$ under constant physical conditions. - Unless specifically stated in questions, ammeters and voltmeters should be treated as ideal (having zero and infinite resistance respectively). - Questions can be set where either I or V is on the horizontal axis of the characteristic graph.	Core Task 5 - Electricity
01/03/27			
08/03/27			
15/03/27			
22/03/27			
		3.5.1.3 Resistivity - Resistivity, $\rho = RAL$ - Description of the qualitative effect of temperature on the resistance of metal conductors and thermistors. - Only negative temperature coefficient (ntc) thermistors will be considered. - Applications of thermistors to include temperature sensors and resistance–temperature graphs. - Superconductivity as a property of certain materials which have zero resistivity at and below a critical temperature which depends on the material. - Applications of superconductors to include the production of strong magnetic fields and the reduction of energy loss in transmission of electric power. - Required practical 5: Determination of resistivity of a wire using a micrometer, ammeter and voltmeter.	
29/03/27	SPRING BREAK		
05/04/27			
12/04/27	Y12		Core Task 6 – Potential dividers, EMF & IR
19/04/27		3.5.1.4 Circuits, Energy and Power	

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26/04/27		- Energy and power equations: $E=IVt$ // $P=IV=I^2R=V^2R$ - The relationships between currents, voltages and resistances in series and parallel circuits, including cells in series and identical cells in parallel. - Conservation of charge and conservation of energy in dc circuits.	
03/05/27			
10/05/27			
17/05/27			
24/05/27	3.5.1.5 Potential divider - The potential divider used to supply constant or variable potential difference from a power supply. - The use of the potentiometer as a measuring instrument is not required. - Examples should include the use of variable resistors, thermistors, and light dependent resistors (LDR) in the potential divider. 3.5.1.6 Electromotive force and internal resistance - Use equations for EMF - Define terminal pd and emf. - Internal resistance - Perform calculations for circuits in which the internal resistance of the supply is not negligible.		
31/05/27	HALF TERM		
07/06/27		3.6.1.1 Circular motion - Motion in a circular path at constant speed implies there is an acceleration and requires a centripetal force. - Calculate magnitude of angular speed, $\omega=vr=2\pi f$ - Radian measure of angle. - Convert between degrees, radians, and rotational speeds (RPM to rad s⁻¹). - Calculate centripetal acceleration $a=v^2/r=\omega^2r$ - Apply centripetal force equation $F=(mv^2)/r=m\omega^2r$ to horizontal, vertical, and banked circular systems. - Identify the physical origin of centripetal force in various dynamic contexts (friction, tension, gravity).	Core Task 7 – Circular Motion
14/06/27			
21/06/27			
28/06/27			
05/07/27			
12/07/27			